STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

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June 12, 2013

Mr. Michael Berkoff
United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard (SRF-6J)
Chicago, Illinois 60604-3507

Dear Mr. Berkoff:

SUBJECT: Comments on the Revised Groundwater Monitoring Plan, Allied Paper Inc./Portage Creek/Kalamazoo River Superfund Site, Operable Unit 2: Willow Boulevard/A-Site Landfill

The Michigan Department of Environmental Quality (MDEQ) has received and reviewed the Revised Groundwater Monitoring Plan, dated April 2013, for the Allied Paper Inc./Portage Creek/Kalamazoo River Superfund Site, Operable Unit 2: Willow Boulevard/A-Site Landfill prepared by ARCADIS on behalf of Georgia-Pacific LLC (GP). The April 2013 Groundwater Monitoring Plan (GMP) was revised from the March 2013, submittal of the Groundwater Monitoring Plan based on conference call comments and discussion between the United States Environmental Protection Agency (USEPA), MDEQ, and GP on March 19, 2013.

The April 2013, GMP is still not an approvable document. A summary of deficiencies is presented in the following paragraphs.

The importance of the long-term monitoring program is explained in the remedy selection portions (Sections 10.3 – Long-Term Effectiveness and Permanence and 10.4 – Reduction of Toxicity, Mobility, or Volume Through Treatment) of the Record of Decision (ROD) for the site. These sections state that, "The magnitude of residual risk and exposure to human health and the environment is directly related to the adequacy and reliability of the cover system, long-term groundwater monitoring, and institutional controls" and that "Sub-alternatives 2A, 2B, and 2C do not eliminate the potential for mobilization of contaminants to the groundwater and surface water interface (GSI), as saturated residuals below the water table would remain at the Willow Boulevard Landfill. Long-term groundwater monitoring would verify whether PCBs are mobilizing to groundwater so that an appropriate action could be taken." The selected remedy for the site was sub-alternative 2C. As stated above, the importance of long-term groundwater monitoring is to validate the protectiveness of the selected remedy that leaves waste residuals in place, partially buried in the aquifer, and on the banks of the Kalamazoo River, in perpetuity.

The purpose of the long-term groundwater monitoring is to support the evaluation of groundwater quality as an indicator of the effectiveness and protectiveness of the

remedial action. Specifically, groundwater monitoring will be used to verify that polychlorinated biphenyls (PCBs) and other selected analytes are not migrating to the Kalamazoo River via venting groundwater. The USEPA, MDEQ, and GP appear to be in agreement on the purpose of the long-term groundwater monitoring; however, execution of a plan that adequately and transparently provides data to evaluate the effectiveness and protectiveness of the remedial action has not been presented in the GMP.

The proposed groundwater monitoring program does not acknowledge the remedial investigation (RI) and ROD determination that groundwater at the site has not been fully investigated. The RI (Section 4.2.7 - Groundwater) summarizes the limited, validated data set for volatile organic compounds, semi-volatile organic compounds, and metals as one sampling event from 1993. The sampling event included 7 wells from the Willow Boulevard landfill and 20 wells from the A-Site landfill, each screened within the top 10 feet of the aquifer. The remaining approximately 30 feet of the aquifer have not been investigated and no additional data are available. Conclusions drawn in the RI about the nature and extent of contamination and fate and transport of contaminated groundwater from the aquifer to the Kalamazoo River include the following statement: "Further evaluation of groundwater is necessary to demonstrate and/or to monitor compliance with applicable criteria."

The ROD (Section 5.5 - Types of Contaminates and Affected Media), states "Groundwater has not been fully investigated, but groundwater quality results obtained thus far have shown detectable concentrations of PCBs and metals in groundwater." GP's groundwater monitoring program does not include sufficient effort to complete the understanding of the nature and extent and fate and transport (site conceptual model) of the groundwater discharging to the Kalamazoo River. Establishing a long-term monitoring network (monitoring locations and screened intervals) to evaluate protectiveness and effectiveness of a specific remedial action, in the absence of a completed site conceptual model, lacks a sufficient supportable basis for decision making.

The vertical aquifer sampling (VAS) program outlined in the GMP does not complete the understanding of the site conceptual model for groundwater to allow appropriate placement of monitoring locations and screened intervals. There are too few VAS locations to provide an adequate level of understanding of groundwater flow and contaminant fate and transport for each landfill. For example, groundwater discharging along the northern Willow and A-Site riverfront has likely had the longest residence time (time of exposure to residuals) as groundwater flows north and westerly across the site to discharge to the river. Groundwater traveling from the area south of the A-Site berm, where residuals remain capped in place and saturated with groundwater, likely will discharge along the northern Willow and A-Site riverfront. Additionally, the presence of a sheet pile wall along the A-Site riverfront disrupts groundwater discharge to the river. The two VAS locations along A-Site may not be adequate to understand the disruption of groundwater flow and contaminant fate and transport caused by the sheet pile wall. Actual flow, fate, and transport conditions at the sheet pile wall are unknown because

an adequate investigation for this type of evaluation was not conducted during or after the RI.

Other deficiencies of the proposed VAS program include terminating VAS borings at the first silt layer greater than one foot in thickness and omission of data collection along Davis Creek. The field determination to terminate VAS borings may not be appropriate for fluvial deposits as fluvial deposits represent the dynamic horizontal and vertical depositional environment of the Kalamazoo River over time. The aquifer likely will contain many complex layers of sand and silt. It is probable that silt layers, one foot or greater in thickness, may be encountered at any VAS boring location and also be discontinuous horizontally beyond each VAS boring location. The presence of a specified thickness silt layer is not sufficient evidence to discontinue VAS.

The plan identifies that temporary piezometers will be installed but does not provide the frequency and duration of piezometer monitoring or details of how the piezometer data will be used for decision making.

The field decision process outlined in the GMP states that deep wells may not be installed at monitoring locations WTW-1 and WTW-3. This section is in conflict with Section 3.2 that states deep wells will be installed at locations WTW-1 and WTW-3.

The field decision process for installing deep wells at locations without VAS does not include analysis of objective data for decision making. The field decision is proposed to be based on field parameter data, geologic and hydrologic data, and other relevant field observations by GP. There will not be any field parameter data to review at the locations where VAS is proposed not to be implemented as groundwater samples will not have been collected. This process will rely only on a geologic boring as location-specific data, and will require field and agency staff to make decisions about groundwater flow and contaminant fate and transport that would necessitate installation of a deep well and its screened interval. A geologic boring alone does not provide any chemical-specific information, yet the GMP has not outlined a decision making process to adequately determine if deep wells will be necessary at proposed locations where VAS is not proposed to be completed.

The use of hydrologic data for decision making has not been explained in the GMP. The GMP states hydrologic data will be used; additional explanation for the use of hydrologic data is necessary.

Details of soil borings, drilling methods, and well construction are not included in the GMP.

The use of river flow rate to determine appropriate sampling time frames to ensure that samples collected are representative of the groundwater and not influenced by the surface water body has not been adequately explained or correlated to the site.

Many references to standard operating procedures (SOPs) and portions of the Multi-Area Quality Assurance Project Plan, specific SOPs, and other referenced materials need to be attached to the GMP so the GMP can be a stand-alone document.

In conclusion, based on the realities of an incomplete site conceptual model and the deficiencies outlined in this letter, the April 2013 GMP, does not represent a groundwater program that will produce adequate data to determine whether the remedial action implemented at the Willow Boulevard/A-Site Landfill is and will remain protective through time.

The MDEQ recommends that the USEPA evaluate these deficiencies and determine the components of an adequate groundwater monitoring program to evaluate the effectiveness and protectiveness of the remedial action based on representative and appropriate long-term groundwater monitoring and analysis. Upon your consideration of these comments, the MDEQ would like to schedule a conference call to discuss the path forward for resolution of the groundwater monitoring program.

The MDEQ appreciates the opportunity to assist the USEPA by providing comments on the GMP and looks forward to assisting the USEPA to progress these efforts into an approvable GMP.

If you have any questions regarding these comments, please contact me at your earliest convenience.

Sincerely,

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